

WHAT IS CLAIMED IS:

1. A UTOPIA (Universal test and operations PHY interface for ATM) interface control method of connecting an Asynchronous  
5 Transfer Mode (ATM) layer function to a physical (PHY) layer function at UTOPIA level 2, said method comprising the steps of:

disposing N groups of 32 PHY layer functions according to a number of UTOPIA addresses;

10 simultaneously controlling transmission of a UTOPIA address between said ATM layer function and said N groups of 32 PHY layer functions;

individually controlling transmission of a cell available signal between said ATM layer function and each of said N groups  
15 of 32 PHY layer functions; and

individually controlling transmission of an enable signal between said ATM layer function and each of said N groups of 32 PHY layer functions.

20 2. A UTOPIA interface control device for connecting an ATM layer function to a PHY layer function at UTOPIA level 2, said device comprising:

N groups of 32 PHY layer functions disposed according to a number of UTOPIA addresses;

25 a means connected between said ATM layer function and said N groups of 32 PHY layer functions, for allowing said ATM layer function to simultaneously deliver a UTOPIA address to said N groups of 32 PHY layer functions;

a means connected between said ATM layer function and each  
30 of said N groups of PHY layer functions, for allowing each of

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said N groups of 32 PHY layer functions to deliver a cell available signal to said ATM layer function; and

a means connected between said ATM layer function and each of said N groups of 32 PHY layer functions, for allowing said  
5 ATM layer function to deliver an enable signal to each of said N groups of 32 PHY layer functions.

3. The UTOPIA interface control device according to Claim 2, wherein said ATM layer function has a priority processing  
10 function of performing predetermined priority processing in Quality of Service (QoS) classes when transmitting cells, and includes a transmission order determination means for assigning priorities to said N groups of 32 PHY layer functions so as to, when two or more of said N groups of 32 PHY layer functions assert  
15 their cell available signals with an identical UTOPIA address, give a higher priority to transmission of cells to ones of said two or more groups of 32 PHY layer functions which will receive constant bit rate (CBR) traffic than to transmission of cells to a remainder of said two or more groups of 32 PHY layer functions  
20 which will receive unspecified bit rate (UBR) traffic.

4. The UTOPIA interface control device according to Claim 2, wherein said ATM layer function has a priority processing  
function of performing predetermined priority processing in QoS  
25 classes when transmitting cells, and includes a transmission means for, when two or more of said N groups of 32 PHY layer functions assert their cell available signals with an identical UTOPIA address and cells to be transmitted to said two or more groups of PHY layer functions are associated with such identical  
30 traffic as CBR or UBR traffic, transmitting cells to said two

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or more groups of PHY layer functions in rotation in order of descending priorities assigned to them in advance.

5 5. The UTOPIA interface control device according to Claim 4, wherein numbers indicating priority which decreases in ascending order of numbers are assigned to said N groups of 32 PHY layer functions, and said transmission means transmits cells to said two or more groups of 32 PHY layer functions in rotation according to the numbers.

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6. The UTOPIA interface control device according to Claim 4, wherein numbers indicating priority which increases in ascending order of numbers are assigned to said N groups of 32 PHY layer functions, and said transmission means transmits cells 15 to said two or more groups of 32 PHY layer functions in rotation according to the numbers.

7. The UTOPIA interface control device according to Claim 3, wherein said ATM layer function includes a transmission means 20 for, when two or more of said N groups of 32 PHY layer functions assert their cell available signals with an identical UTOPIA address and cells to be transmitted to said two or more groups of PHY layer functions are associated with such identical traffic as CBR or UBR traffic, transmitting cells to said two or more 25 groups of PHY layer functions in rotation in order of descending priorities assigned to them in advance.

8. The UTOPIA interface control device according to Claim 7, wherein numbers indicating priority which decreases in 30 ascending order of numbers are assigned to said N groups of 32

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PHY layer functions, and said transmission means transmits cells to said two or more groups of 32 PHY layer functions in rotation according to the numbers.

5           9. The UTOPIA interface control device according to Claim 7, wherein numbers indicating priority which increases in ascending order of numbers are assigned to said N groups of 32 PHY layer functions, and said transmission means transmits cells to said two or more groups of 32 PHY layer functions in rotation  
10 according to the numbers.

10. A back wiring board for use in a UTOPIA interface control device for connecting an ATM layer function to a PHY layer function at UTOPIA level 2, said back wiring board comprising:

15           a line connected between said ATM layer function and N groups of 32 PHY layer functions disposed according to a number of UTOPIA addresses, for allowing said ATM layer function to simultaneously deliver a UTOPIA address to said N groups of 32 PHY layer functions;

20           a line connected between said ATM layer function and said N groups of 32 PHY layer functions, for allowing said ATM layer function to simultaneously deliver data to said N groups of 32 PHY layer functions;

25           a line connected between said ATM layer function and each of said N groups of 32 PHY layer functions, for allowing each of said N groups of 32 PHY layer functions to deliver a cell available signal to said ATM layer function; and

30           a line connected between said ATM layer function and each of said N groups of 32 PHY layer functions, for allowing said ATM layer function to deliver an enable signal to each of said

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N groups of 32 PHY layer functions.

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